# Fort Hood, Texas, Mass Casualty Incident

*Carl R. Darnall Army Medical Center Uses After-Action Performance Report to Improve Six Emergency Management Areas in Shooting Aftermath*

## Contents

**Joint Commission Resources**



*Carl R. Darnall Army Medical Center personnel stepped in as first responders to the disastrous Fort Hood shooting spree.*

This time it wasn't a drill. On November 5, 2009, a gunman opened fire at a military post in central Texas, killing 13 people and wounding 31 others. Most of those who were shot were military personnel, and one was a civilian police officer. The alleged gunman, a psychiatrist assigned to Carl R. Darnall Army Medical Center, was shot but captured alive, and the case is currently in the military justice system.

Located just outside Killeen, Texas, Fort Hood is the largest U.S. military installation in the world. It's also home to Carl R. Darnall Army Medical Center, which has 128 beds and employs about 3,600 personnel, including active-duty military, government-employed civilians, and contract workers. The hospital is under the command of Colonel Steven E. Braverman, M.D.

## The Hospital's Response

"We're situated just a mile from the site of the incident," Braverman says, "and within five minutes, we knew this was a mass casualty event. We called a Code Gray [an organizationwide

## Fort Hood, Texas, Mass Casualty Incident

*(continued from page 1)*

command to activate the disaster plan] and sent first responders to the scene. Some people had already loaded several wounded into a truck and were driving them to our hospital." Twelve minutes after the shooting began, Darnall's emergency operations center was up and running. The lock-down procedure was initiated for everyone except internal staff, and entry and exit were permitted only from the emergency department (ED) and the hospital's main entrance. This enabled the command to switch its force protection measures for Fort Hood to "delta." Delta is the highest level of security under the Department of Defense Force Protection Condition, a terrorist threat system that describes the measures to be taken by security agencies in response to terrorist threats against military facilities.

The timing of the event was unique because it happened on a day on which all staff members and all leaders were present, along with physicians from the hospital's emergency medicine residency training program. "They're all trained responders," says Braverman. "Although they hadn't practiced as a team, they were fully experienced in surgery, ICU, and emergency medicine in a war zone. This enabled us to provide the highest level of care."

### Gathering Information

An important feature of the hospital's internal communications network is an intranet-based proprietary software system that enables hospital staff members to share their comments. Within three or four hours after the wounded were cleared from the ED, staff started using the sharing program to post information on the intranet for the after-action performance report.

The comments were organized by Colonel Joan Vanderlaan, deputy commander for nursing and patient services, who sorted them into the six critical categories of emergency management, as defined by The Joint Commission (see "Six Critical Aspects of Emergency Management" on page 3). "It took only a few hours to organize the comments," says Vanderlaan. "We accepted all input, and we didn't give a higher priority to comments from officers than to clerical personnel. If the information was relevant to making us better, we used it."

### Two Reports

Once comments had been accumulated from concerned parties throughout the hospital, the after-action report was reviewed by the hospital's joint performance improvement committee. The first review took place on December 1, 2009, followed by a second review in February 2010. "The focus of those meetings was to get feedback about whether we had performed up to our expectations," says Braverman. "The six-category format was really helpful," he says, "because it helped us put things in perspective." One of the things Braverman and others were looking at was how well they had cared for Army and civilian personnel—not just the wounded at the scene but also the caregivers and others psychologically affected by the event. The review generated 60 action items prompting changes in the Emergency Operations Plan (EOP).

### Triage

One area noted for improvement was the method of triage. The hospital's plan had called for a triage officer to determine where incoming patients should go and whether they should be evacuated to a different site, based on their level of injury or trauma. "But

that triage system didn't happen the way we'd designed it," says Braverman. "The shooting took place in a soldier readiness area where a lot of people were experienced in combat first aid but weren't necessarily part of the hospital staff. What happened is that we evacuated everyone who needed emergency assistance from the incident site to our hospital until we were full. Then we started evacuating to other hospitals."

A secondary triage took place at the front door of the hospital as a staff person determined where incoming patients would go when they arrived at the ED. "This allowed for rapid evacuation and clearing of the scene. Everyone got cared for immediately, and it probably saved lives," says Braverman. "But it wasn't the process that we had outlined in our Emergency Operations Plan for initial triage in a mass-casualty incident."

## Patient Tracking

Patient tracking was another important element of the incident. Emergency responders from several hospitals, ambulance services, and air evacuation operations were involved in moving the wounded. "We found there was room for improvement in several aspects of tracking and communication, including synchronizing the radio frequencies," says Braverman. "We needed a better handle on who was evacuated, where they were treated, their medical condition, and their prognosis."

Braverman says that the scenario would be different in the case of a train wreck or an airplane or bus accident, where on-site triage would be more likely. "We had a really fluid situation," he says, "and we need to incorporate in our plan the importance of flexibility, especially when we have a great many responders, both official and non-official, who are combat trained."

---

### Six Critical Aspects of Emergency Management

Joint Commission standards define six critical aspects of emergency management, which should be coordinated by the organization's Emergency Operations Plan (EOP), as follows:

1. Communications (EM.02.02.01)
2. Resources and assets (EM.02.02.03)
3. Safety and security (EM.02.02.05)
4. Staff responsibilities (EM.02.02.07)
5. Utilities (EM.02.02.09)
6. Patient clinical and support activities (EM.02.02.11)

---

## Communications

The hospital served as liaison not just to the Fort Hood emergency operations center but also to the civilian community, including the media. The hospital had to make sure that one person was in charge of communications and that all communication was routed through one chain of command instead of three or four different reports to different commands. "We did continual on-the-spot assessments, and we had to be ready to change our plans when necessary," says Braverman.

## Mass-Casualty Drills

The hospital customarily conducts mass-casualty drills twice a year, one of which is a full-scale drill involving Fort Hood and the surrounding community. In May 2010 the hospital conducted a full-scale drill, which enabled the organization to assess improvements it had made after the shooting incident and to address some new wrinkles. "We used drill scenarios that would challenge the areas where we wanted to improve," says Braverman. Participants in this drill included the Garrison Incident Management Teams, the Installation Emergency Operation Center, and municipal governments. "With soldiers acting as live patients, we simulated moving them through the hospital, trying not to interfere with everyday activities,"

Braverman recalls. "Meanwhile, staff members worked around real patients coming in the door and getting triaged."

The drill emphasized the action items that came out of the after-action report compiled as a result of the shooting: communications, triage, patient tracking, and more. The hospital tested some of its solutions, including a bar-code wrist-band tracking system and newly assembled trauma packs for mass or individual casualties. The trauma packs are prepackaged manila folders containing all the forms necessary to track patients, including requests for pathology, radiology, and any other test that patients might undergo. These folders are staged in the office of the patient administration division, ready to go when a Code Gray is called.

"Our staff was comfortable going through the exercise because they knew how well they had done six months before, during the real thing," says Braverman. "They exhibited a kind of quiet self-assurance because they understood how vital these drills are. It was a different level of confidence—the kind you get when everyone is well trained."

## Advice from the Experts

What is Braverman's advice to other health care organizations about their after-action response to a mass emergency?

---

# The Networked Health Care Environment

## Keeping Patients Safe—Sometimes?

Your son has just been injured in a football accident and is about to undergo a brain scan when suddenly the MRI system crashes because of a software update. Or perhaps your mother has just begun one of her periodic kidney dialysis sessions when the dialysis lab equipment goes down because of a computer glitch in another area of the organization. Should these failures have been foreseen? And how can they be prevented in the future, as more and more medical equipment is networked?

These are just some of the questions that concerned the International Electrotechnical Commission (IEC). Working in collaboration with the International Organization for Standardization (ISO), IEC's Technical Subcommittee 62A: "Common aspects of electrical equipment used in medical practice" and ISO Technical Committee 215: "Health informatics" put together Joint

Working Group 7 (no relation to The Joint Commission). The working group was made up of international medical technology experts representing the United States, Japan, Germany, and a number of other countries. The group developed a new international standard known as IEC 80001-1:2010, "Application of risk management for IT networks incorporating medical devices—Part 1: Roles, responsibilities, and activities." This standard addresses the risks to medical devices and the IT networks they are a part of, including the potential for system crashes, equipment malfunctions, network incompatibility, and compromised security in networked health care environments. The goal is to make networked health care environments throughout the world safer, better integrated, more efficient, and less prone to life-threatening failures.

IEC 80001-1:2010 is being well received in the United States, where IT

network security is a growing concern in health care organizations.

"Health care organizations around the U.S. are hurrying to convert to electronic health records (EHRs)," says Todd Cooper, president of Breakthrough Solutions Foundry, Inc., and co-chair of the ISO/IEC working group. "At the same time, advances in IT are enabling huge increases in information sharing. These advances and the convergence of medical devices with IT are creating unique new systems—what we call 'systems of systems.'"

### Overlooking Patient Risk?

Cooper and his fellow experts believe that the increasing technological complexity and the innovative application of these systems threaten to cause serious user confusion. The perceived potential of these systems to lower costs and increase effectiveness in health care places enormous pressure on health care organizations to seamlessly transfer information to and from medical devices. An even greater concern is that in the rush to meet EHR incentives, the pressure and risk is considerable to overlook the risks to *patients*, which is quite different from the risks to *network* security and stability.

"In those conversations, who's talking about managing the risk to patient safety when converged networks don't work as intended?" asks Sherman Eagles, partner at SoftwareCPR and co-chair with Cooper of the working group. "The potential for adverse incidents from converged technologies is enormous. There's really not



*New regulations can help manage the patient safety threat posed by networked health care technology.*

enough space or time to describe all the real-life examples of system errors, network crashes, spectrum overloads, and the dreaded 'blue screen of death.'"

Mary Logan, J.D., C.A.E., is president of the Association for the Advancement of Medical Instrumentation (AAMI), the organization that administered the work on IEC 80001-1:2010 and adopted and published the standard in the United States as an American national standard. (It was adopted by AAMI as ANSI/AAMI/IEC 80001-1:2010 and is identical to the international IEC standard.) "It's one thing to be concerned about patient privacy, network security, and other information-related risks," she says. "It's quite another to think about patient safety, which is a more imperative risk to be managed."

The Joint Commission recognized the potential for disastrous consequences of health care systems networking when it issued *Sentinel Event Alert* Issue 42 in December 2008: "Safely Implementing Health Information and Converging Technologies." The *Alert* reads, in part, "As health information technology (HIT) and 'converging technologies'—the interrelationship between medical devices and HIT—are increasingly adopted by health care organizations, users must be mindful of the safety risks and preventable adverse events that these implementations can create or perpetuate."[1]

## The Need for Regulation

The IEC working group believed that the risks to patient safety posed by these new systems within systems are not being adequately addressed throughout the health care enterprise. In this environment of connectivity, they doubted that risk could be managed simply through a culture of safety, through a Joint Commission *Sentinel Event Alert*, or by assigning these important patient safety issues to the IT department or any other single group

<div style="border:1px solid blue">

### Existing Joint Commission Requirements Regarding Information Management

The "Information Management" chapter in the *Comprehensive Accreditation Manual* covers electronic information. With respect to patient safety and technology, organizations should pay particular attention to the following standards:

- IM.01.01.01 addresses planning the management of information.
- IM.01.01.03 requires a disaster recovery plan for information systems and the periodic testing of the plan to ensure its effectiveness.
- IM.02.01.03 requires the safeguarding of data and information against loss, destruction, and tampering.

Leadership standards LD.04.04.03 and LD.04.04.05 also address designing new processes and establishing a safety program.

</div>

functioning alone (for example, clinical engineering, facilities management, patient safety officer, vendors, consultants, device manufacturers).

Many people from various disciplines in a health care organization interact with these systems of systems and are affected by their successes and failures. For this reason, health care facilities need to facilitate a "matrix of mindfulness," or an interdisciplinary approach, about ways in which many different kinds of users can effectively interface with a complex network of systems without risk to patient safety. The much-needed IEC 80001-1:2010 standard, which addresses this interdisciplinary aspect, was approved by the IEC on September 24, 2010, following a three-year development process.* "What makes this standard unique in health care is that it addresses the entire life cycle of networked medical devices," says Cooper.

"Medical device manufacturers have decades of experience in quality control," says Logan. "Medical devices are designed, engineered, built, and delivered with regulated checks and balances to maximize safety and performance." However, Logan notes that manufacturers usually have little, if any, control over what happens to their products once they are put into ser-

---

* The American National Standards Institute adopted it on October 6, 2010, and the AAMI adopted it on October 14, 2010.

vice. "Medical device manufacturers don't connect their products into hospital networks," she says. "The reality is that health care organizations connect devices into the networks." Hospitals and other health care organizations assemble those systems of systems in an effort to provide a mix of safety, efficiency, and cost-effectiveness that meets their organizational mission. IEC 80001-1:2010 was developed in the face of this reality.

## Medical IT Network Roles and Responsibilities

IEC 80001-1:2010 recognizes that a health care organization is ultimately responsible for its IT network. However, the successful deployment and use of that network in a clinical environment—and its interconnected systems and applications—require a detailed understanding of key properties and risk factors, as well as a partnership between the end user or responsible organization and those supplying and incorporating medical devices and IT technologies. By applying the guidelines and principles of IEC 80001-1:2010, organizations can properly manage their use of networked technologies and focus on the primary mission of their organization—providing health care.

IEC 80001-1:2010 defines a *medical IT network* as an IT network that incorpo-

# It All Starts with a Good Plan

## *Master Planning Creates a Road Map for Change*

**W**elcome to *"Construction Quality," a new series in* EC News *that examines various aspects of the health care planning, design, and construction process. This month, we address the basis for any construction project—master planning.*

Almost every health care organization engages in a construction project at some point—whether it's renovating an existing space, adding a wing or new department to a current building, or creating an entirely new facility. Such projects have the potential to be complicated and time-consuming—and quite expensive. The finished result has the potential to enhance the health care environment, contribute to safer patient care, and be a state-of-the-art facility. To be successful, a construction project requires a well-considered plan, detailed design drawings, and a dedicated team committed to navigating the planning, design, construction, and commissioning phases.

Over the next few months, *EC News* will present an ongoing series about construction in which we discuss the different aspects of a project and offer tips and strategies to consider along the way. This first article in the series offers a discussion of the master planning process.

## What Is Master Planning?

*Master planning* is an interactive and dynamic process in which a multidisciplinary team outlines the building needs and plans for an organization. A well-developed master plan reveals how a construction project ties in to an organization's strategic plan as well as its current physical, organizational, social, political, and economic context. "The result of an effective master planning process is a facility solution that reflects both the current and future needs of your organization as well as its overall strategic direction," says Scott Nelson, director of planning and design for

Advocate Healthcare, an integrated health care system headquartered in Oak Brook, Illinois. "A master plan provides a road map to the planning, design, and construction process. This road map is responsive to the strategic initiatives and operational goals of your organization and helps ensure that any work you do on your facility today won't negatively affect work you want to do 10 years in the future." In fact, a well-crafted master plan is invaluable in preventing your organization from making critical facility-related decisions—often with long-lasting consequences—in an information vacuum.

## Selecting the Team

An essential component of the master planning process is the team that develops the master plan. Such a team should include representatives from various areas of your organization. Although this group will vary depending on the organization and the scope of the planning effort, it can include the following people:

- CEO, CFO, and other representatives of senior leadership
- Physician leaders
- Nurse leaders
- A representative of the board of directors
- Established planning or building committees within the organization
- Representatives from infection control
- Representatives from facilities planning and/or engineering



*An effective master plan helps create effective and enhanced health care space.*

- Representatives from other clinical disciplines, such as allied health, pharmacy, and laboratory
- Representatives from the community, such as patient or family representatives or community leaders

There are many benefits to having a diverse master planning team. Engaging a wide variety of perspectives can yield innovative and appropriate results, as well as greater staff buy-in to and satisfaction with the project.

Involvement of the C-suite is especially important in this phase. "If you don't have the right level of senior leadership involvement, the master plan becomes just another document," says Nelson. "Lack of involvement leads to lack of buy-in and ultimately can effect whether the planning effort is successful. On the other hand, strong senior leadership involvement can help ensure that the master plan ties in to the strategic objectives of your organization as well as your overall business plan."

In addition to the previously mentioned team members, your organization may also want to include on the team consultants who specialize in strategic facility planning. "In some cases, these consultants may be architects, but that is not always the case," says Nelson. "Architects may tend to focus on 'brick and mortar' solutions to issues, but sometimes a need can be addressed through reconfiguring existing space or improving operational efficiency. For this phase of the project, organizations need to make sure they hire consultants who can think strategically, look holistically for solutions to problems, and don't focus only on new architectural solutions."

## Gathering Information

Once your organization has put together a master planning team, it's time for that team to gather, digest, and interpret information. "During the
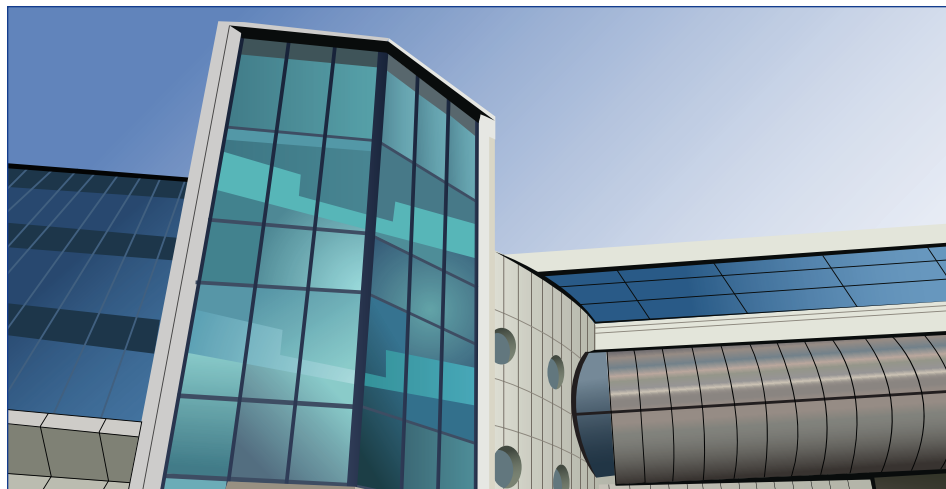


*A needs analysis can help an organization decide whether to renovate—or build new.*

information gathering phase, team members should identify the strategic and operational constraints of the current facility and determine how those should be addressed in the future," says Nelson. "To do this, teams should review information about the current facility and its strengths and limitations, current operations and future goals, the needs of the populations served by the organization, and so on." Specifically, data collection activities should look at the following areas:

- Existing services
- Operational structures
- Property boundaries and features
- Facilities

Documenting the layout, size, and function of existing facilities is necessary to understand their current use and condition, as well as their future capacity. As part of this effort, the project team may want to develop narrative and graphic histories of each facility, including changes in the physical plant. The team may look at existing drawings and verify that they are accurate. In some cases, an on-site survey, with measurements of each department, floor, building, and site, may be necessary.

### Needs Analysis

One activity to consider during the data collection process is a needs analysis.

This detailed assessment for each department or service looks at current capacity, projected needs, and strategic goals for the particular department or service. For example, as part of a needs assessment for a maternity unit, your organization may examine population projections of women ages 15 to 44, including historical and projected fertility rates by geographic area. Similarly, in assessing the needs of the surgical service, your organization may examine the impact of managed care and estimate what the population-based surgical procedure rate will be in the future.

Marketing studies and demographic analyses are often part of a needs analysis. These types of research can help your organization get information on a variety of topics, including the following:

- Service areas
- The payer mix of constituents
- Community perceptions of the facility and a potential construction project
- Appropriate location of a new facility
- Potential lost revenue due to a construction project or relocation of a facility
- The presence and impact of competition

Results from this research should be considered when determining

# Safe Patient Handling Techniques

## Experience from Long Term Care Migrating to Acute Care Facilities

Long term care facilities have known for many years that safe patient handling techniques can protect not just their patients and residents but also their employees. Now, in an effort to cut down on injuries and preserve the well-being of their workforce, acute care facilities are implementing many of these same patient handling techniques.

### The Bottom Line

According to the Bureau of Labor Statistics, injuries from lifting in long term care facilities are 4.5 times higher than the national average for all industries.[1] In fact, long term care incidence rates for direct care staff rank near the top of the list when considering all the industries that report information to the Bureau of Labor Statistics.[1]

In addition, patient handling tasks are burdening a workforce that may be finding these tasks increasingly difficult to perform. That's because the health care workforce is aging rapidly and, with fewer people entering the profession, staffing shortages are predicted to continue in the future.[2]

The cost of occupational injuries presents a significant burden to the health care industry, and the impact of these costs is even greater than many realize.[3,4] Only the direct costs associated with these occupational injuries are considered when investigating cost impact. Direct costs include the cost for medical care and the compensation paid to injured workers.

In addition to direct costs, however, there are indirect costs related to occupational injuries. Indirect costs include replacement of the injured worker, additional training time by supervision and administration, loss of productivity, decreased morale, and other related issues. Some estimates are that the indirect costs of occupational injuries can exceed four times the amount of direct costs.[5]



*The number-one cause of occupational back injury for caregivers in health care facilities of all types is repositioning patients in bed.*

Source: Joerns Healthcare

> **Technology**
> **+ Process**
> **+ Training**
> **= Effective lifting program**

### Components of Effective Lifting Programs

Statistics point to the need for improved patient lifting—and patient lifting programs to facilitate that. Guy Fragala, Ph.D., P.E., C.S.P., is an occupational safety and health professional and senior advisor for ergonomics at the Patient Safety Center of Inquiry in Tampa, Florida. He notes that, to be effective, a lifting program requires the following three major components (see the graphic above):

1. The technology necessary to minimize the need to manually lift and move residents
2. A process to integrate lifting and moving residents into the operational activities of delivering care
3. Employee training

Fragala stresses that employee training must begin with helping employees to recognize that the practice of manually lifting and moving residents must change. "Traditionally, caregivers have manually lifted and moved residents as part of their caregiving duties," says Fragala. "That's why health care employees are in one of the most at-risk occupations for musculoskeletal injuries."

## Technology Comes on Board

Fragala describes the technological advancements in patient handling techniques: "The old patient lifts introduced in the 1950s were based on the design of engine lifts used by mechanics. Then, in the 1990s, we saw an influx of high technology from Europe, and the design of patient lifts has continued to advance over the past 20 years. Today's stand-assist lifts can make it easier to help residents into a standing position."

## Acute Care Is the New Wave of Patient Handling Programs

"Until now, it's been easier to implement safe patient handling programs in sub-acute care facilities," says Fragala. "But the steadily rising costs of all kinds of health care and the increasing number of injuries among patients and employees are forcing acute care facilities to recognize and adopt the same patient handling techniques used in sub-acute facilities. (See "Five Star Quality Care's Lifting Programs," right.) Driving this change is the need to contain health care costs."

Acute care has some built-in advantages in adopting safe-handling programs. One is the type of bed that is standard in acute care. "A major challenge in most health care facilities is repositioning the patient in the bed," Fragala says. "This is the number-one cause of occupational back injury for caregivers in health care facilities of all types. That means pulling the patient or resident up to the head of the bed, which is really hard, regardless of whether the bed is flat or inclined up."

Fragala advocates putting beds in the Trendelenburg position, also called the gravity-assist position, in which the patient's head is tilted back. Fragala measured the amount of work (Work force x Distance traveled) required to move a 200-pound mannequin up to the head of a bed when the bed is in a gravity-assist position. "When the bed is in that [gravity-assist] position, we can reduce the amount of work needed by 67%," he says. "And in acute care facilities, every bed has this capability. So by reducing the work required to move the patient, we reduce the risk of injury to both patients and caregivers and reduce the possibility of skin tears for fragile older patients."

## Education and Cooperation for an Effective Program

While the acute care industry increasingly recognizes the effects on its operating costs of replacing injured workers, senior management nevertheless has many issues to deal with and many priorities competing for attention. "Safe patient handling may not be at the top of their list because they don't understand the ready availability of effective solutions," says Fragala. "It is a multidisciplinary issue that affects many areas of a health care facility, and it demands input from many levels and disciplines within the health care delivery organization."

Fragala believes that an organization needs to facilitate appropriate education—from senior leadership to direct care staff—directed at understanding the needs and benefits related to effective patient handling programs. "Once the issues are well understood, the organization can effectively attack the problem on a united front," says Fragala. "This requires a commitment of

---

### Five Star Quality Care's Lifting Programs

Five Star Quality Care, Inc., in Newton, Massachusetts, operates 220 senior living facilities, including independent and assisted living facilities, skilled health care facilities, and continuing care retirement communities, along with assisted living facilities with an Alzheimer's focus (ALALZ). It also owns and operates two rehabilitation hospitals—the Braintree Rehabilitation Hospital in Braintree, Massachusetts, and the New England Rehabilitation Hospital in Woburn, Massachusetts.

In response to alarming trends in employee injuries related to patient handling, Five Star began introducing low-lift ergonomic resident transfer programs in its skilled nursing facilities in 2001 and has continued to grow these programs into the rehabilitation hospitals. As part of the program, Five Star conducts nursing assessments on patients for whom a mechanical lift is indicated, and based on these evaluations, it develops ergonomic low-lift care plans.

"Physical therapy partners with nursing personnel assess residents and patients and determine the safest method of transfer for both parties," says Gail T. Lynch, corporate director of health and safety for Five Star. Care plans include the transfer method identified by this assessment. Clinical employees are trained in proper use of lifting equipment and good body mechanics, and follow-up training is provided throughout the year.

"Since our program began, we've seen a significant decrease in injuries to our employees," Lynch continues. "The injury data we evaluated two years before and two years after the program began shows a reduction of 44% in frequency and a drop in severity of 32%."

Lynch also points out the human factors that underlie the issue of safe patient handling. "Our patients and especially our residents are among society's most vulnerable people, and their caregivers establish strong relationships with them. As an organization, we strive to maintain that vital relationship."

---

### Fort Hood, Texas, Mass Casualty Incident

"People have different impressions of an incident as time passes," he says. "So you want to begin documenting the facts on the ground as soon as possible. But do it in stages so you're getting information in different phases of the event."

Braverman also notes, "The importance of how information flows to the staff didn't become apparent in the first couple of days. You should establish ways to capture and share information that will affect the long-term care and status of individuals."

In addition, Walter Alvarado, a civilian who serves as emergency management planning coordinator at Carl R. Darnall Army Medical Center, offers the following pointers for other hospitals, both military and civilian:

- Make your drills as realistic as possible. That can be a challenge because of staffing or funding limitations, but you have to make the effort to train that way.
- Make sure you take a team approach. Avoid "stove-piping," which means sending information out vertically to higher offices/managers instead of to the medical planners or operations personnel who actually do the work. Involve as many people as possible in the planning process so everyone knows what you want to accomplish.
- Establish goals and objectives quickly and make sure they're attainable and measurable so you can compare outcomes from one drill to the next.
- Involve command personnel right away. To get buy-in and support, keep them informed and involved about what's going on.
- Announce any drills as early as possible so you get as many people to participate as you can.

And, finally, concludes Alvarado, if an incident occurs, leadership must address the staff as soon as possible to limit rumors and mitigate fears. This sends a message to staff, visitors, patients, and family members that the leadership is there for them and has their concerns at the top of their priorities. ■

---

### It All Starts with a Good Plan

whether to do a construction project as well as when determining the location, nature, timing, and financial impact of the project.

#### Workload Analysis

Another activity to consider during data collection is a workload analysis. This helps project the space needed for specific components of a construction project, such as operating rooms, patient beds, and examination rooms. Depending on the project scope and size, team members may wish to create a five-year profile that details the following:

- The historical workload, staffing, and other measures for each department or service
- An analysis of operational policies, functional requirements, patient care objectives, and growth assumptions

This picture will help provide an understanding of overall trends, seasons of peak demand, and the link to operational goals. These must be tempered with an understanding of changing health care patterns.

#### Interpreting the Information

As the team gathers information, it must also spend time reviewing, interpreting, and responding to that information. This should be an interactive process, with workshops, meetings, research, and "homework" periods for all participants. It should involve distinct tasks, benchmarks, and checkpoints in order to ensure a thorough investigation.

The results of this process should be a series of documents that show the strategic direction of the facility and how it will meet the changing needs of the organization. Depending on the project, a master plan may include the following documents:

- A department-level space plan
- Diagrams showing the interrelationships between spaces
- An illustration of how different spaces lay out within a site
- A business plan that discusses the return on investment for the project
- A projected budget for each phase of the project

If your team includes a strategic facility planner, he or she will be responsible for creating these documents based on and with continued input from the other members of the master planning team.

Many organizations see the master plan as a living document that must be revisited, revised, and updated on a regular basis to respond to changing conditions. This plan, if developed properly, will be flexible enough to meet the evolving needs of your organization for several years. ■

*—Watch for more articles in the "Construction Quality" series in coming issues of EC News.*

### The Networked Health Care Environment
*(continued from page 5)*

rates at least one medical device, and it identifies three key properties that must be considered and maintained as medical IT networks are created and evolve: patient safety, networked system effectiveness, and the security of the data and the system.

As outlined in IEC 80001-1:2010, top management of the health care organization establishes the policies, procedures, and resources needed to ensure that the key properties are maintained. The standard also details the roles and responsibilities of the medical IT network risk manager, as well as medical device manufacturers and other technology providers. It is not the intent of the standard to force a one-size-fits-all template on health care organizations. Rather, it identifies key stakeholders and how they fit into the overall picture, along with the activities and documentation that must be supported.

Each health care organization should consider these requirements, evaluate the organization's needs and capabilities, and adapt IEC 80001-1:2010 to meet its unique challenges. The IEC 80001-1:2010 standard does not specify the extent or exact content of the risk management documents; it can be scaled from simple to comprehensive, depending on the organization's resources and risk management maturity.

### Risk Management Activities

IEC 80001-1:2010 risk-management activities cover the entire life cycle of a network, from initial design and deployment, to ongoing maintenance and upgrading, to eventual decommissioning. Risk management must become an integral part of every change made to the network.

According to IEC 80001-1:2010, when a new network is considered or a change to an existing network is proposed, the responsibility for performing risk management—according to organizational policies and procedures—rests with the medical IT network risk manager. This role coordinates the activities of the health care organization, engages appropriate internal stakeholders, and facilitates the involvement of medical device manufacturers, technology vendors, and others who must join forces to manage changes to converged networks.

Medical device manufacturers and technology vendors are responsible for providing information related to the risk management of their products on the network, according to the IEC 80001-1:2010 standard. Sometimes the health care organization needs more information than is generally made available by the vendor. In this case, the medical IT network risk manager may negotiate what are called "responsibility agreements" with the vendor, describing any additional information

or service the vendor will provide. A responsibility agreement may be a separate contract or part of a purchasing agreement, a service-level agreement, or another document.

### Starting to Use IEC 80001-1

More information about IEC 80001-1:2010 is available from the AAMI Web site.† In the meantime, Todd Cooper provides some advice: "I suggest that you get a copy of the standard, read it, and start to identify how this could apply within your organization. Then set up some pilot projects to get your feet wet." AAMI's Mary Logan suggests, "Virtually every health care organization has some project that involves network integration where they could think about patient safety in a more focused way. Devise a well-defined, low-risk, high-payback, matrixed project, maybe one that's already planned for a new network or an upgrade, where IEC 80001-1:2010 could be applied for practice. See how it works, make whatever adjustments are needed, and then expand it."

#### Reference

1. The Joint Commission: Safely implementing health information and converging technologies. *Sentinel Event Alert*, 42. http://www.jointcommission.org/sentinel_event_alert_issue_42_safely_implementing_health_information_and_converging_technologies (accessed Dec. 2, 2010).

† *Visit http://www.aami.org/news/2010/110210.press.80001.html.*

---

### Safe Patient Handling Techniques
*(continued from page 9)*

resources, but the outlay is one of the best investments a health care facility can make." Fragala says that when he addresses senior leadership teams and they comprehend the opportunity for improvement for their organization, they're usually willing to commit the necessary resources.

"There's also a wealth of support available

from the providers of patient lifts and bed system technology," he says. "Equipment providers are more than willing to provide program support, from conducting needs assessment all the way to program implementation and follow-up."

#### References

1. Bureau of Labor Statistics (BLS), U.S. Department of Labor: Table R9. *Number of Nonfatal Occupational Injuries and Illnesses Involving Days Away from Work by Occupation and Selected Natures of Injury or Illnesses*. Washington, DC: BLS, 2000.
2. Buerhaus P.I., Staiger D.O., Auerback D.I.: Implications of an aging registered nurse workforce. *JAMA* 283:948–942, 954, 2000.
3. Garrett B., Singiser D., Banks S.: Back injuries among nursing personnel: The relationship of personal characteristics, risk factors and nursing practices. *AAOHN* 40(11):510–516, 1992.
4. Williamson K., et al.: Occupational health hazards for nurses, Part 2. *Image J Nurs Sch* 20(3):162–168, 1988.
5. Fragala G.: Implementing ergonomic approach promotes workplace safety. *Provider* 18(12):31–34, 1992.

# Two Great Emergency Management Programs in Arlington, VA!

## 2011 Emergency Management Standards Pre-Conference

**April 26, 2011** (Program Code EDU1111)

The 2011 Joint Commission Emergency Management standards require organizations to use a "scalable" approach to planning for emergencies, which can enable them to manage a variety of disasters, even if the disaster escalates in intensity, complexity, scope, or duration.

## 2011 Emergency Preparedness Conference: "Collaboration, Continuity, and Community" April 27–28, 2011 (Program Code EDU1112)

This 7th annual conference is the defining event for planning, maintaining, responding, executing, and evaluating the critical elements of emergency preparedness as defined in The Joint Commission's standards. Major emergency preparedness issues will be explored in depth, along with strategies and solutions for standards compliance and improved preparedness. The plenary session topics complement all health care settings while individualized track sessions cover specific disaster events and components of emergency planning. Ample opportunity for networking, including an informal information exchange, will also be provided.

**Both conferences will be held at the Crystal Gateway Marriott Hotel. Attend one or both to ensure your organization is ready for any emergency, any time!**

**Joint Commission Resources**

For more information or to register for these events, please visit our Web site at http://www.jcrinc.com or call our toll-free Customer Service Center at 877/223-6866.

Our Customer Service Center is open from 8 A.M. to 8 P.M. ET, Monday through Friday.

http://www.jcrinc.com